

## ABSTRACT OF THE DISCLOSURE

The number of grains in active regions of devices can be made uniform by making the grains of crystalline semiconductor films, obtained by thermal crystallization using a metal element, smaller. The present invention is characterized in that a semiconductor film is  
5 exposed within an atmosphere in which a gas, having as its main constituent one or a plurality of members from the group consisting of inert gas elements, nitrogen, and ammonia, is processed into a plasma, and then thermal crystallization using a metal element is performed. The concentration of crystal nuclei<sup>1</sup> generated is thus increased, making the grain size smaller, by performing these processes. Heat treatment may also be performed, of course, after  
10 exposing the semiconductor film, to which the metal element is added, to an atmosphere in which a gas, having as its main constituent one or a plurality of members from the group consisting of inert gas elements, nitrogen, and ammonia, is processed into a plasma.